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[VOL. I.

VARICELLA, OR CHICKEN-POX.

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[Reported for this Journal.]

THE first of these titles is the diminutive of variola, expressive of a slighter degree of that disease, and the second was probably conferred from the resemblance of the varicellous affection to a similar one in chickens. The poultry of England, according to Jenner, have such an eruption—and he further states, that "in Bengal, they are subject to a disease very like small-pox, which prevails epidemically, and is very fatal. Chickens, there, are inoculated, to preserve their lives." *

It was early remarked, in the history of small-pox, even by Rhazes, that certain exanthematous affections, analogous to it, occasionally appeared, which afforded no protection against that disease. These were subsequently described, about three hundred and fifty years ago, by Vedium, under the title of chrystalli, or chrystalline pock, by reason of the vesicular, rather than the pustular nature of the eruption—and, from that time, a pretty regular account of varicella has been transmitted. By Sydenham it is especially noticed, as a spurious variety of variola, and such seems to have been the view commonly entertained of it. But it is probable that the popular notion in relation to the affection was otherwise, since various vulgar epithets, implying a distinction, were invented in the different countries of Europe, and among these, the English terms, chicken-pock, swine-pock, and hives. It is, indeed, acknowledged by Fuller, in his work, printed in 1730, describing the eruption by this title, that he borrowed it "from the nurses." Moreton, who lived contemporaneously, or nearly so, with him, adopted the same designation, and henceforward, it is every where to be met with.

The first scientific examination of the subject, however, was by Heberden, who, in a paper published in 1767,† contended with great force of argument, that varicella depends on a contagion, specifically different from that of variola, and clearly pointed out the difference in the two diseases, which came to be the universally received doctrine, till, recently, its validity was questioned.

An attack of varicella is marked by few peculiarities. Commencing as most fevers do, and continuing in various degrees of severity, till the expiration of the second or third day, the eruption begins to be disclosed. Yet, for the most part, the fever is moderate, and attracts little or no attention. The eruption is, usually, vesicular, appearing on the face, next on the breast and back, and, ultimately, on the extremities, occasionally preceded by a rash, which is attended by some itching or tingling. It

comes out, in successive crops, so that some of the vesicles are matured, some shrivelled away, and some just emerging, thus presenting every stage of progression, and this consecutive train may be maintained for several days. "They are about the size of a split pea, perfectly transparent, covered simply by the cuticle, and, when the eruption is copious, the body has the appearance of having been exposed to a shower of boiling water, each drop of which had occasioned a minute blister." There are, however, varieties in the configuration of the vesicles, which were early recognised, and discriminated by the popular names of chicken-pox, swine-pox, and hives, and since, more classically entitled by Willan, lenticular, conoidal, and globate varicella, according to the respective forms.

To Bateman, and other writers of easy access, by whom all the peculiarities of these modifications of the disease, have been minutely indicated, I must refer for such information. It may be succinctly stated, that the eruption, thus undoubtedly diversified as to shape, is sometimes, also, characterized by an earlier or later appearance—by its being oftener purely vesicular throughout its existence, though in other instances more pustular, as well in figure as the contained fluid,—that, without any secondary fever, it begins to dry and scab, in the order of its successive occurrence,—the whole falling off by desquamation, in four, six, or eight days, seldom leaving any pits, or other vestiges.

But though such are the ordinary aspects and course of varicella, it occasionally exhibits itself very differently. The fever is infinitely more vehement, the local affections of the stomach, lungs, and brain, correspondently heightened, and the case as well in the character and extent of the eruption, as in other features, approaching very closely to small-pox. An account of an epidemic varicella of this exasperated nature, is given by Sims, as having prevailed in London, some fifty years ago, and sporadic cases of a similar kind are familiar to us in this city.

That varicella belongs to the class of diseases, proceeding from a specific infection, is not disputed. But, whether this be distinct, or the same as that of variola, is a point still under discussion—and the progress of opinion, in relation to it, has been already adequately traced. It is by Professor Thompson, that the views as settled for a time by Heberden, have been endeavoured to be reversed or overthrown, to revive, again, the ancient notion, that varicella is really modified small-pox. To this conclusion, he was led by a very attentive observation of the phenomena of the epidemic variolous disease, at Edinburgh in 1818, and confirmed by a very elaborate research into the subject. Expressed in a few words, these are his arguments:

1. That varicella and variola may each communicate the other by a subjection to their respective contagions, by inoculation, or through the atmosphere.

* Barron's Life of Jenner, p. 237.

† Med. Trans. Coll. Phys., London, vol. 1.

2. That neither disease ever prevails epidemically, without the other being, at the same time, observable.

3. That varicella never shows itself, except in persons, who previously have had variola or vaccinia, and, hence, that it is the product of the variolous virus operating on a system thus modified.

It must be confessed, that these positions are sustained by an immense mass of facts, and by a chain of very cogent and plausible reasoning. Yet few converts have been made to them, and the weight of authority still decidedly preponderates in favour of what was antecedently considered as the established doctrine.

Let us next see how this side of the question is supported, and, to attain greater perspicuity, I shall take up the adverse positions just mentioned, in the order in which they are presented.

1. It is replied, that it is exceedingly difficult, while the two diseases are simultaneously prevailing, to assign the origin of a case of the one, to the infection from the other, as the contagion of both is diffused at the same moment, through the atmosphere. Nor is it true, that the two diseases can be mutually produced by inoculation. The virus of variola invariably causes small-pox, and it is altogether doubtful, whether varicella be capable of propagation in this mode. Experiments, which go to prove it, are contradicted by a host of an opposite description, and it is not unreasonable to presume, that, in the few successful trials alleged, the matter procured was variolous. On this point, the language of the late Mr. Bryce, of Edinburgh, a most respectable authority, is very decisive. It is stated by him, "that he has taken lymph from the vesicles of true varicella, with the greatest care, at all periods of the disease, and all seasons of the year—that he himself has inoculated, and seen others inoculate with it, children, who had never undergone either small or cow-pox, to the number of thirteen, yet, in none of these, was this disease, or any thing like small-pox ever produced."*

2. That the allegation of the uniform simultaneous prevalence of varicella and variola, is not borne out by the history of the diseases. The fact is, that though they do occasionally co-exist, the reverse oftener happens. Much proof might be adduced of their separate and independent prevalence. Enough, however, may it be to state, that we are assured, that, from 1809 to 1823, varicella was annually observed at Copenhagen, without variola, and that it is well known, for quite as long a period, the same happened in this city.

3. That it is erroneous to suppose, that varicella cannot exist in a system which has not undergone the variolous or vaccine infection. Common experience denies it. Examples of the kind were very familiar prior to the introduction of vaccination, when the unprotected system was more frequently to be met with, and are still sometimes witnessed.

To the preceding objections to the hypothesis I am combating, it may be added, as calculated further to its invalidation, that vaccination practised subsequently to varicella, pursues its ordinary course, which it does not after small-pox, and that

varicella undergoes no change in a system modified by the influence of vaccinia or variola. Finally, varicella, with few exceptions, is distinct from small-pox, in the character of the eruption, the pustular and attendant symptoms, and in every other material respect.

Enough has been said of the discriminative signs of this disease—and its prognosis, as well as anatomical characters, may, hence, be so readily deduced, as not to require to be indicated. Of its pathology, I have only to add to the remarks already incidentally delivered concerning it, that varicella is, unquestionably, one of those diseases in which the system loses its susceptibility to a second attack, or, if such occasionally happens, it must be deemed an anomalous deviation from the tenor of its character. It occurs almost exclusively in infancy and childhood, so strictly so, that some have denied its existence at all, in adult or more advanced life. But this, perhaps, is going too far, as Willan, Gregory, and other of our best authorities, have observed the contrary, though the instances on record, well authenticated, are extremely few, and the question may be considered as not satisfactorily determined. Existing sometimes sporadically or sparsely, it much more commonly prevails epidemically, under which circumstances, it makes a wide sweep, among children, running through whole families, or the larger collection of them, in schools. This embraces all which I deem of importance in relation to the history of varicella. As to the treatment, little is usually required to be done—and when a case assumes a more serious aspect, a course similar to that in mild small-pox may be adopted.

A LECTURE ON POISONED WOUNDS, *delivered at the Philadelphia Medical Institute, by THOMAS HARRIS, M. D., Surgeon U. S. N., and to the Pennsylvania Hospital.*

POISONED wounds are among the gravest accidents to which we are liable. Independently of the mechanical injury inflicted by the wound, there is superadded a noxious principle, the effects of which, on the whole system, occasion alarming symptoms, and, not unfrequently, death. These symptoms are more or less violent, according to the character of the deleterious agent, by which they are induced. These agents are derived from the vegetable, mineral, and animal kingdoms.

The poisoned wounds, which chiefly engage our attention, in this country, are those arising from the venom of serpents, and rabid animals. The surgeon is also sometimes called to relieve patients, from the effects of the stings of various insects. Wounds, from the common bee, humble bee, wasp, &c., are sometimes productive of severe inflammation. Death has not unfrequently been the consequence of attacks of these animals. They have a subtle poison, contained in a receptacle, situated within the abdomen, among the air vessels, which is furnished with a proper apparatus, for injecting the wound made by their sting. In some of these insects, this liquor is highly acrimonious, and quickly excites violent inflammation. I believe, in all instances, where death results from the stings of bees or wasps, that it arises from active inflamma-

* Thompson on Varioloid Disease, p. 74.

tion, either in or about the larynx, so as to interrupt respiration. I once witnessed the death of a fine horse, from this cause, which had been carelessly hitched in the vicinity of a hive of bees. Upon examining the horse, after death, I found that the bees had ascended his nostrils, as far as the posterior fauces, inflicting upon him stings during their whole course. The consequent inflammation and tumefaction of the tonsils and pharynx, closed the mouth of the larynx, and thus produced suffocation.

The common mosquito, some varieties of fly, spiders, and the scorpion, often inflict severe and dangerous wounds. It is only particular constitutions that suffer severely from the fly or mosquito. Spiders have sometimes caused dangerous wounds, though I believe that most of the species are harmless.

The scorpion is a venomous insect, though I believe its sting does not often prove fatal. In Africa and Persia, where these animals are found of a large size, their wounds sometimes prove fatal, but in the West Indies their sting does not give rise to symptoms more alarming than that from the common honey-bee. The sting of the species found in this country will give rise to slight pain and tumefaction, but is, in other respects, harmless.

Fatal consequences often arise from the bites of serpents. Of the American serpents, two species only are acknowledged to be venomous—the rattle-snake and copper-head. There are several varieties of each of these species. These reptiles are furnished with long and curved teeth, or poisonous fangs. These curved or hooked teeth are pierced by a canal, which terminates at some distance from the point, or the convex part, in a small groove, which extends to the apex of the tooth. The venomous liquor is contained in a sac, at the root of the fang, and under the muscle which depresses the lower jaw. When this muscle acts with violence, as when the animal prepares to bite, it compresses the poisonous reservoir, and throws its contents into the teeth.

The deleterious operation of this poison will materially depend upon its quantity, and upon the season of the year in which the wound is inflicted. The rattle-snake is more lively, and its venom more active during very warm weather, than at any other period. The effects, produced by the poison, vary, according to the parts wounded, the depth to which the fang penetrates, and the quantity and strength of the venom in the reservoir. In some instances, death follows in a few minutes after the injury, and in others not until many days.

The effects are first local and then general. At the moment the bite is inflicted, acute pain is commonly felt, which, in some instances, extends to a considerable distance from the point of injury. The wounded part soon becomes red and tumefied, and not unfrequently these symptoms extend throughout the injured limb, and even to the whole body. At times, blisters are raised about the wound, and a sanguous fluid slowly distils from it. Shortly afterwards, the pain greatly diminishes, the limb exhibits an edematous and doughy softness, becomes cold, and the skin is covered with livid and gangrenous spots.

The patient now becomes anxious, respiration is difficult, with great weakness and copious cold sweats; the pulse is depressed, small, and irregular; the countenance ghastly, with muttering delirium.

Vomiting sometimes is an attendant symptom, with copious bilious discharges per anum, cold sweats, and universal yellowness, with severe pains about the umbilicus.

When the effects of the poison are sudden, it is probable that the fang has penetrated a vein, by which the poison was carried directly to the heart. When no serious symptoms have followed the bite of the rattle-snake, it is probable that the teeth entered obliquely and did not entirely penetrate the true skin, or that the poisonous reservoirs were empty, or that the virus itself had become changed, from some cause, in its properties. From these considerations, we may explain why certain articles of the Materia Medica have obtained reputation as antidotes. Nature is, of herself, sometimes enabled to accomplish a cure, or the virus injected has been insufficient in quantity and quality, to produce death.

The copper-head, of this country, is nearly as poisonous as the rattle-snake. The European viper is much dreaded, but according to Fontana, it is a less poisonous reptile, than the snakes of this country, to which I have alluded. The *cobra-de-capello* of India and Africa, is also extremely venomous. A history of their domestication by the natives, as detailed by Bruce, is exceedingly curious.

Wounds from rabid animals are generally alarming, though they do not always produce hydrophobia. It is somewhat remarkable, that such wounds heal as readily, as those inflicted by healthy animals.

A number of persons may be bitten by the rabid animal within a short time of each other, and the wounds may appear equally extensive, and nothing done for their removal, and yet hydrophobia may occur in some cases, and not in others. This difference of effect may arise from some of them being bit through the clothes, by which the venom was wiped off the teeth; from a smaller quantity of the poison being injected into the wound, or from other causes which are still inexplicable. It is a fact, with which we are all familiar, that the system is, at times, in such a state, as to resist all infections or poisons. We see it as regards small-pox, measles, hooping-cough, and, indeed, every other form of contagion or poison, with which the human frame is afflicted. The constitutional disease will sometimes appear, in five or six days after the local injury, and sometimes as many months will elapse before any disturbance of the system becomes apparent. The common period of its appearance, however, is from the thirtieth to the fortieth day. Generally, the wound inflames and becomes painful, before the appearance of the constitutional symptoms; but, sometimes, the disease takes place without any alteration in the site of the wound. When the constitutional disease begins to manifest itself before the wound heals, a remarkable change, in the appearance of the sore, generally takes place. Instead of continuing to granulate and discharge good pus, it inflames, assumes a sloughing appearance, and the discharge becomes ichorous.

Hydrophobia is always preceded by great

depression of spirits, a general restlessness, and unhappy state of mind. There is a gloom spread over the countenance, and an inclination to avoid society. It would appear that these primary symptoms do not arise from the alarm excited by the bite of the animal thought to be mad, but are inseparably connected with the disease, as they are also observed to occur in children who have been bitten, and who are incapable of appreciating their danger. To these symptoms succeed a loss of appetite, nausea, a quickness of pulse, a starting in sleep, great thirst, with an inability to swallow liquids. This inability not only gradually increases, but every attempt is attended with inexpressible horror, and universal agitation. There is a perpetual ejection of viscid phlegm from the mouth; the eye now becomes prominent and wild, the countenance anxious, the respiration difficult. At a later period the pulse becomes remarkably quick, with an expression of alarm or apprehension, wild startings, and, sometimes, convulsions, when liquids are presented, or the surface of the body touched with a current of cold air. The operations of the mind are at last so deranged, that the patient becomes completely maniacal. His wild expressions of alarm, and his apparent efforts to escape from the danger by which he imagines himself surrounded, added to his other symptoms, at length produce so much exhaustion, that he sinks, about the fourth or sixth day, under his accumulated sufferings.

There are dangerous injuries, to which *anatomists* are particularly liable, which may, with great propriety, be classed with the poisoned wounds.

Persons, engaged in the dissection or examination of putrid or ulcerated bodies, in macerating or making preparations, have, occasionally, suffered from wounds of the scalpel, or needle, or from spicula of bone.

These wounds give rise to violent inflammation, extending up the arm as high as the axilla, or neck, rendering the whole limb exceedingly painful and much swelled, and, finally, producing extensive abscesses, gangrene, and death. Examples of this kind are by no means uncommon. The celebrated anatomists, Fyfe, Chambon, and Corvisart, all, nearly lost their lives by accidents of this character. Professor Le Clerc, Allan Burns, Dr. Gordon, professor of physiology at Edinburgh, fell victims to wounds from dissection. Some years ago, I attended Dr. P_____, of the navy, who wounded himself very slightly by the needle with which he was sewing up a body which we had examined. The patient died from the irritation of an extensive abscess, connected with exostosis. The next day after the occurrence he began to feel pain in the part wounded, which increased in violence, accompanied with tumefaction of the arm and shoulder, fever, delirium, a dark tongue, and tenderness over the epigastric region. With the scalpel, I opened the finger to the bone, and applied a blister, which extended from the hand to the shoulder, and extracted about six ounces of blood, by means of cups, from over the region of the stomach. By such means relief was afforded, and the patient's life was preserved. He was, however, about five or six weeks before he entirely recovered.

The medium through which these various poisons act on the general system, is a point which is still unsettled by pathologists. While some suppose this medium to be the nerves, others the lymphatics, and others, again, the veins; the system may be, and no doubt is, often affected, at times, through each of these several systems. In wounds inflicted in dissecting rooms, and in those arising from certain species of serpents, and from rabid animals, there is sufficient length of time from the infliction of the injury, to the appearance of constitutional symptoms, to allow the poison to enter the system by absorption.

In other cases, however, when death follows the injury in the course of a few minutes, it is more rational to conclude, that the system becomes affected through the agency of the nerves. The bite of the cobra-de-capello produces death in five or six minutes. Life has been destroyed by the external use of prussic acid in a still shorter period. The poison may be conducted, it is true, with great rapidity to the heart by the veins.

The experiments of Magendie satisfactorily establish, what indeed was believed by Celsus and Galen, that *the veins* possess an absorbing power. These experiments have been confirmed by Dr. Barry, an English army surgeon, when resident at Paris.

The object, which this ingenious experimentalist had in view, was to illustrate the "influence exercised by atmospheric pressure, upon the progression of the blood in the veins, upon that function called absorption, and upon the prevention and cure of the symptoms caused by the bites of rabid or venomous animals."

Passing over his speculations on the moving power of the venous blood, I shall briefly notice some of his interesting facts, in relation to poisoned wounds. Presuming that the alarming symptoms, to which these wounds give rise, are occasioned by the absorption of poison into the general circulation, he came to the conclusion that these effects could be prevented by arresting its absorption. This, he thought, might be achieved, provided the "points of contact of the absorbing surfaces, and the substance to be absorbed, were placed under the influence of a vacuum." The removal of the atmospheric pressure was accomplished by means of cupping glasses.

The first knowledge of absorption may be traced in the history of poisoned wounds. The period when the baneful art of inflicting these wounds originated, is lost in the obscurity of fable. The arrows of Hercules, the sufferings and death of Chiron, Nessus, and other fabled personages, afford evidence that a knowledge of these destructive agents, was almost coeval with the history of man. The manner in which poison became mixed with the fluids of the body, was first explained by Celsus. He perceived that the veins were the channels through which the poison was carried into the general system. Hence, if the poisoned wound occurred in one of the extremities, he recommended the application of a ligature above the point of injury.

Hippocrates recommends the application of cups to poisoned wounds, without, however, detailing his own experience of their utility. In the Iliad,

Machaon is made to suck the wound of Menelaus, which is the earliest record we have of a vacuum being applied to a poisoned wound.

When the blood-vessels were pointed out as the channels for transmitting the poison to the system, a ligature above the wound naturally suggested itself, and as cups, or the cucurbitulæ prevented the contents of the veins flowing towards the heart, their utility appeared obvious. Celsus, accordingly, considered that cupping glasses should be almost exclusively relied upon, both as a preventive and remedial agent in cases of poisoned wounds.

He directs that a ligature should first be tied above the wound, then cupping glasses should be applied as the most effectual means of extracting the poison. Direct suction by the mouth was considered, next to cupping, the *best* preventive.

Strato, Pliny, and Plutarch speak of the *Psylli*, the *Marsi*, and the *Ophigenes*, a class of persons, who were supposed to possess a hereditary power of curing the bites of numerous serpents. They exercise their skill, in wounds of this character, by sucking them. Their great success, in such cases, procured them a reputation, so deservedly high, that they became indispensable appendages to the Roman armies. A corps of these wound-suckers was attached to the army of Cato during his campaigns in Africa. It is stated by Suetonius, that Augustus ordered the *Psylli* and *Marsi* to suck the wounds of Cleopatra, with the hope of restoring her to life, after she expired from the bite of an asp.

It is stated on the authority of Camden and Fuller in their history of the Holy Wars, that Queen Eleanor saved the life of King Edward I. of England, by sucking the poison from a wound, inflicted by a Mahometan assassin.

After the discovery of the *lymphatic* system, the lymphatics were long considered as the sole agents of absorption, which was carried on by a vital action, and the treatment of poisoned wounds underwent a sudden revolution. The cupping glasses were laid aside as too mechanical. The lymphatics had taken up the poison by an inherent vital principle. Stimulants must, therefore, be given, to modify their action and to induce the exhalents to throw off the morbid matter. Irritants must be applied to the wound on the principle "ubi stimulus ibi affluxus." The discharge was to be kept up by every possible means, whilst the vitality of the absorbents was to be destroyed by caustics.

Thus did theory, or, what is more commonly dignified by the name of principle, triumph over facts, or over a well established course of practice. It remained for Barry to conduct us back to the point from which we had been enticed by theorists, and to establish, by well contrived and judicious experiments, the utility of a practice, not less distinguished for the antiquity of its origin than for its triumphant efficacy.

To establish the value of creating a vacuum over the poisoned surface, Dr. Barry procured different kinds of poisons, of known activity, such as prussic acid, strychnine, upas, cicuta, arsenic, &c. &c. With these deleterious agents he experimented on rabbits and dogs, having always two animals placed under corresponding circumstances, as regards depth of wound, point of insertion, and

quantity of substance employed, *except* that the cupping glass was applied to the one, while the other was consigned to his fate. The neglected animal always died sooner or later, while the one to which the vacuum was applied, never showed the slightest symptoms of poisoning, although the destructive agent remained in contact with the wounded surface during the space of an hour, and even so long as five hours in succession.

These experiments were performed in presence of several distinguished members of the French Institute. The report to that body confirming the truth of Dr. Barry's views was drawn up by the late professor Laennec.

Further, to test the efficacy of the cupping glass, our experimentalist had several dogs and rabbits bitten by vipers. To the bites of some, he applied the cupping glasses, whilst to the others nothing. Although the animals abandoned did not ultimately perish, the results obtained by the comparison were precisely analogous, as far as regards symptoms, to those noticed in his former experiments.

"Animals bitten by one, two, and sometimes by three vipers, on which the cupping glasses had been applied for half an hour, experienced no symptoms of constitutional poisoning, whilst those that were entirely neglected, were invariably attacked with convulsions, stupor, and the dogs by vomiting. Pigeons invariably died from one bite of the viper, the fatal symptoms generally commencing before the end of the fifth minute; but, when the cupping glass was applied immediately after the bite, they showed no signs of having absorbed the poison, while the glass remained on." Even in cases where the poisoned animal had been left to its fate until convulsions or tetanic symptoms had supervened, the application of the cups suspended entirely all the alarming symptoms.

The experiments of Dr. Barry were repeated some years ago, by Dr. Pennock, of this city, and with similar results. These experiments were conducted with great skill and judgment.

During his experimental inquiry, he discovered that pressure, or the application of a weight equal to fifteen pounds over the wounded surface, proved quite as effectual in preventing, as well as in suspending the symptoms of poisoning, as the establishment of a vacuum. The poison employed in this experiment was *strychnine*, the fatal strength of which had been tested in former experiments. It must, therefore, be obvious, that there could be no mistake in Dr. Pennock's observations on this point.

After the removal of the weight, as well as of the cups, the poison has sometimes been observed to excite constitutional symptoms. In some instances such effects have been induced several hours after the cups or weights had been employed. In a practical point of view this fact is of great importance. It teaches us not to rely exclusively in alarming cases on the cupping glass. Though this preventive agent may prove abundantly efficacious, under ordinary circumstances, yet in cases of bites from rabid animals, or in poisons of slow operation, other means should be used, besides those which I have already detailed. These means are such as have been found efficacious in the hands of surgeons in all ages.

The first thing, then, to be done in treating the recent bite of a rabid animal, is to apply a powerful cupping glass over the wound. This measure supersedes, at once, the use of the ligature, ablation, excision, &c., during the period of its application, and for a certain time after its removal. After the cupping glass has been applied for an hour, *at least*, the whole of the parts wounded or abraded by the bite, should be freely dissected out. The application of the cupping glass will extract a portion of the poison, and concentrate to a particular point the remainder of it, so that it can be, generally, removed by excision. Afterwards the cups should be reapplied, in order to remove any of the poison which had been forced into a vessel beyond the reach of the knife.

I believe, with Dr. Barry, that the "notion of hydrophobic poison being absorbed in the usual manner, and that it lurks in the system several weeks before it produces its peculiar effects, is contrary to all analogy." He believes that, in cases of poisoning from the bites of rabid animals, as in all others, the "commencement of the symptoms, is synchronous with the consummation of the absorption, and that their repetition is dependent upon its renewal."

As an evidence that the poison remains inactive and stationary, inflammatory symptoms occur in the injured part a few days previously to the explosion of the constitutional symptoms. These circumstances are replete with practical instruction. They teach us that so soon as the cicatrix grows tender or sore, or when there is sufficient evidence that the animal, which inflicted the wound, was rabid, we should immediately apply the cupping glass, and proceed exactly as in the case of a recent bite. As we have evidence that the cupping glasses removed tetanic symptoms, we should not be deterred from using them even after hydrophobia has commenced.

In cases where the cupping instruments cannot be immediately commanded, suction, by means of the mouth, may be advantageously substituted. When the mouth is free from wounds or ulcers, there is little risk in the experiment. Dr. Benjamin Smith Barton swallowed the poison of the rattlesnake, without suffering any other inconvenience than a slight irritation of the fauces.

Excision alone can be useful only when it reaches beyond the poison. It is stated by Fontana, that the particles of poison which may have been forced further than the boundary of the excised wound, will be sent to the heart with greater rapidity after the operation than it otherwise would have been, owing to the wider mouths of the vessels being now fully exposed to receive the atmosphere within their cavities.

Hence, the necessity of first applying the cups by which a retrograde movement of the fluids is effected and also of their reapplication after the injured part is excised, in order to remove any remaining portion of the poison which may have penetrated beyond the reach of the knife.

If the part bleed freely after these operations, the hæmorrhage may be arrested by the actual cautery. Besides burning the small vessels, their mouths are sealed and rendered incapable of further absorption. I have no doubt that this course

of treatment will prove efficacious in every species of poisoned wound, if practised, at a period sufficiently early; no matter whether the wound arise from the sting of insects, an injury in the dissecting room, or from the bite of a serpent or rabid animal.

There are other remedies, which have acquired reputation in the management of poisoned wounds, but it is very difficult to ascertain the degree of reliance, which ought to be placed on them. There are many wounds of this character, which would terminate favourably, if left to the operations of nature, and there are others, in which no alarming symptoms supervene. When, then, these agents are employed, either as preventives or curatives, it is impossible to say whether the cases would not have done equally well had they not been used. These are points which can only be settled by a series of experiments. Whoever shall take upon himself this trouble will at once subserve the cause of science and of humanity.

These remedies consist of the internal and external use of ammonia; of olive oil; hieraceum venosum, a species of the rattlesnake root; alisma plantago, or water plantain, and many others of scarcely less notoriety.

The records of medicine furnish the strongest testimony in favor of each, but for the reasons which I have already stated, they cannot, and ought not to command our confidence until their utility is established by judicious experiments. This is, more particularly, our duty, since we have a remedy, the efficacy of which is established beyond the reach of doubt.

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Par E. ESQUIROL, Médecin en chef de la maison royale des Aliénés de Charenton, &c., &c., 2 vol.
8vo. Paris, 1838.

M. ESQUIROL has been, for many years, constantly occupied with the study and treatment of mental diseases; his reputation has increased with the progress of knowledge, and has become more firmly established, since the increase in the number of physicians specially occupied with the treatment of the insane. The memoirs which he published, from time to time, in the *Dictionnaire des Sciences Médicales*, have lost none of their freshness, for truth never fades; and, although these essays may seem incomplete, and sometimes imperfect, they will remain as part of the history of classical medicine, for they were written in the spirit of true inductive observation, directed by enthusiastic devotion to the interests of the unfortunate insane.

The present work is not strictly new; it consists of a series of those essays, which must be familiar to a portion of our readers; but they have all been carefully revised, and are, as it were, sanctioned

by this republication, in a collective form. They are thrown into as regular an order as possible, and are not very different from a systematic work. A succession of essays can never, however, completely replace an elaborate work, and we cannot avoid joining in the regret, which M. Esquirol himself expresses, that his numerous engagements should prevent him from exerting his long promised resolution of publishing a complete account of his experience in the management of insanity. We regret the loss, without being surprised at it, for few physicians, who have collected much instructive and useful knowledge, in a long course of observation, succeed in rendering that knowledge available to the world, if they postpone its publication until the decline of life. Advancing age brings with it increasing infirmities, and professional engagements of a more lucrative kind, than those which occupy the earlier years of a physician. The hours which remain after the daily labours of practice, can scarcely be devoted to toils, which are more severe and less profitable; and after years of anticipation, a physician usually ends by relinquishing his promised work.

The arrangement of the work is as nearly similar to that of a systematic treatise as possible. A memoir upon insanity, which was published more than twenty years since in the *Dictionnaire de Médecine* serves as an introduction to the treatises on the particular varieties of insanity which compose the body of the work. Hence the reader is enabled to observe something like a systematic course of study, and is not rapidly hurried from one subject to another, as necessarily occurs with works consisting of a collection of treatises, written at different times, and on various diseases, not closely connected together.

If there is not sufficient unity in the plan and execution of the whole work, the most perfect simplicity of practice, and most conscientious observation of the symptoms of insanity are shown in each portion of it. This is one of the strongest characteristics of the work; there is not a single memoir in which the author does not show that he teaches what he believes, and that he believes because he has observed conscientiously, and without a desire to overturn established medical opinions, or rashly to introduce a system of practice which is to supersede all others in which our predecessors may have put faith. M. Esquirol is strongly impressed with the natural disposition, if we may use the word, of most diseases to a termination; hence he has devoted most of these memoirs to the study of the history of insanity; and the treatise on the crises of insanity is one of the most impressive in the work.

This mode of termination of the disease is by no means rare; in our insane hospitals we have often witnessed it, sometimes in cases which had resisted the usual treatment.

There are numerous other modes of termination of insanity, either from the gradual and imperceptible changes occurring during the course of the disease, or from the action of our remedies. These remedies are made by M. Esquirol subordinate to the natural course, and, as it were, subsidiary to the natural mode of treatment. Hence, in all cases, more especially in chronic insanity, he carefully abstains from any sudden active interference; but at the entrance of a patient he places him under observation, gains his confidence by gentle and friendly treatment, and then watches until he can interfere with the best prospects of success. His remedies are always simple; he rarely prescribes blood-letting largely, nor does he use purgatives, except of the mildest kind. Baths, both general and local, especially the shower bath, seclusion, and appropriate moral treatment, are found sufficient remedies for many acute cases, and offer the best results in chronic forms of insanity. Still, we think M. Esquirol is rather too sparing in remedial agents in the management of acute insanity; for although there is a distinction well marked in most cases between insanity and phrenitis, the line is not equally well drawn in a considerable number of instances of violent insanity, especially those occurring during the hot months of the year. Such cases require treatment of a more active character than M. Esquirol has advised. It is in chronic insanity that the mild, soothing method proves most useful, especially that happy combination of moral and medicinal treatment which is pursued at the private asylum of M. Esquirol. These results are not, however, so favourable as those which are claimed by some of the institution of this country. Without doubting the accuracy of these statements we fear that they are sometimes fallacious. For with no disease is it more easy for the physician to commit errors in the estimate of his success than with insanity. The degree of mental strength necessary to constitute perfect sanity is, of course, extremely various, and can only be fairly tested after the lapse of a considerable period.

The question as to the increase of insanity is treated by M. Esquirol in one of the memoirs; to a limited extent, he admits the influence of the various political and religious excitements which have involved the world, and have spent their utmost violence upon France. The increase in the number of the insane is, however, rather apparent than real, and arises, as is remarked by the author,

chiefly from the multiplication and better management of lunatic asylums. The friends of lunatics are, therefore, more willing to entrust them to these institutions, than to the wretched habitations to which these unfortunates were formerly consigned.

A large portion of the second volume is devoted to an account of the hospital at Charenton. Of this we may speak at a future period.

CLINICAL LECTURE.

LECTURE ON CLINICAL MEDICINE, delivered at the Philadelphia Medical Institute, by W. W. GERHARD, M. D., Physician to the Philadelphia Hospital, &c.

DYSENTERY.

(Concluded from page 241.)

Friday, July 13th.—In my last lecture, I spoke to you of dysentery. I might have sketched different modes of treatment, as influencing the mortality in this disease, but I preferred waiting till you should have seen a number of cases. There are various general modes of treating it. All dysenteries vary in violence, and there is no simple set of symptoms, but the greatest variety; these correspond to the severity of the disorder, the rectum alone being affected, in many cases, while, in others, the whole mucous membrane of the alimentary canal is involved. This last is the ordinary form of the disease when it prevails as an epidemic, which is local, usually confined to particular districts. There was lately an epidemic at Germantown, which was very severe, though the city of Philadelphia has been healthy. Princeton, and its vicinity, were subject to epidemic attacks of dysentery of a very aggravated character, which yielded but little to medicine. The epidemic of last summer, which some of you witnessed, was the most severe that has occurred at Philadelphia for many years.

In France, very simple modes of treatment only are required; Broussais' plan of using opiates,—paralysing the bowels, putting them into splints, as it were, scarcely ever fails. In Paris, I never saw a fatal case of dysentery; and a gentleman there, who had charge of a large hospital, told me that, in many years, he had lost but three or four cases of it. In cases, where there are few nervous symptoms, and no ataxic condition of the system, (meaning by ataxic, severe prostration of strength,) we can readily cure by mere opiates, say twenty drops of laudanum, frequently repeated. They soothe the irritation; the narcotic checks the action of the bowels, and nature effects a cure. In severe cases, we must address our remedies to the skin, and make use of local depletion. Bleeding from the arm is rarely necessary; cataplasms should be applied over the bowels, and we may use leeches to the anus and abdomen. Depletion from the anus is very serviceable, as it acts almost immediately upon the inflamed surface.

There was a case shown to some of you, this morning, of a child, which had been attacked with measles, followed by dysentery; the disease was confined principally to the rectum and lower por-

tion of the colon; the upper part of the colon was pale, and some false membrane spread over the rectum, and there was, also, some softening of the mucous membrane. Slight cases involve the rectum alone, the transverse or descending colon being never affected, and they are at once cured by leeches to the anus. In inflammatory cases, this sometimes acts like magic.

In some years, dysentery is more rapid in its course, and will not yield easily to remedies. I will now speak of the dysentery of warm climates. Warm weather, or, rather warm days, followed by cold nights, such as are common in tropical climates, produce the disease. The late change in the temperature has already produced several cases of dysentery; the thermometer having fallen twenty degrees, in the last two days. Chronic dysentery, for I have not seen the acute form in tropical climates, usually occurs from exposure to the night air, after very warm days. Sailors who have their watch on deck, during the night, are very subject to it.

Various kinds of treatment are serviceable in different stages of dysentery; as to which is the best, I am undecided. It is impossible to lay down any one plan for managing the disease, as we must modify our practice according to the particular character of the affection at the time. Last year it was very malignant, there was great disposition to gangrene, and fetid sloughs were mingled with the stools. Post mortem examinations showed ulcerations and gangrene of the intestines. During life, there was great prostration and much subsultus. Depletion would not here have answered; in strong men, it might have been beneficial, but I am by no means sure of it. In typhoid cases, as they are called, (using the word typhoid in a very vague sense) we must attend particularly to the skin, and give mild stimuli; a prescription of Dr. Twining's I have found beneficial, consisting of

Pulv. Ipecac. gr. vi.

Ext. Gentian. gr. iv.

Pilul. Hydrarg. gr. v.

Three times a day.

This was used towards the close of the disease and did much good; but little opium was given with it, and the discharges from the bowels became more feculent and less frequent. Our treatment did more good towards the close of the disease, in accordance with the rule that all epidemics become milder after a time. It is the case with fever and ague, yellow fever, cholera, &c. I could not decide as to the efficacy of this treatment in very severe cases. We used, besides this prescription, a combination of ipecacuanha, calomel, and opium, such as is employed in bronchitis, accompanied with great prostration. The calomel was increased from one-sixth to one-fourth, and one-half of a grain every two hours, when salivation was desired, and a grain of ipecacuanha, and from one to two grains of opium, according to the severity of the symptoms, were combined with it; in mild cases this treatment proved very serviceable. In the first prescription the ipecacuanha did the most good by its effect upon the skin; occasionally, but not frequently, vomiting was produced. Where the last prescription was used, it was evidently

the mercury that acted, and the speedy relief of the symptoms, when the gums were touched, was very decided. In cases accompanied with much sloughing the mercury did not appear to be of great service.

There has been introduced in these cases, within a few years, a combination of sugar of lead and opium. The claim to the origination of this remedy is a disputed point; a very respectable physician, in extensive practice in this city,* first advocated it here. Dupuytren suggested its use in cholera, six months before the disease appeared in Paris, and treated a number of patients with it in a ward of one of the hospitals, and, after losing rather more than any one else, he gave it up.

Two years ago, this remedy, in my hands, answered better than last year in checking the haemorrhage from the intestines, for the disease was not, at that time, attended with so much prostration as last year. The most severe case under my notice occurred in one of the house physicians; this gentleman took two grains of acetate of lead with a grain of opium every hour for several days, being, as you see, a very large quantity of each article, but it did little good; the opium was then increased to two grains every hour, for four hours, when he became drowsy and the discharges were less frequent, were not attended with so much pain, and diminished in quantity; he, finally, slept for some time. Very large doses of the sugar of lead may be given in severe cases, without producing any gripping pain in the bowels, although it is otherwise in milder; and this does not appear to be owing to any carbonate of lead, that may be mingled with the salt, for, in all our good apothecary shops, it is kept in the form of crystals and powdered when wanted for use. Ipecacuanha or mercury is occasionally added to it.

Great benefit is derived from injections, in mild cases; but, when there is much irritation of the lower part of the bowels, they cannot be borne; even laudanum, added to a very minute portion of mucilage and thrown up, will excite immediate spasm and be rejected; the mechanical irritation of the pipe of the syringe will also forbid its use, so that in such cases the opium must be taken by the mouth, though it is not so beneficial as when it can be given by injection. Towards the close of the disease, injections of laudanum will be very serviceable. We may also apply narcotics to the skin either to the anus or over the abdomen; in children, a few drops of laudanum in a poultice, applied to the anus will act very readily. With adults not so much effect is produced, for the skin of children absorbs with much greater facility, than with grown persons. In adults a teaspoonful may be used, with but little effect, but, in an infant it is unsafe to begin with more than three drops poured on the poultice. We can increase the quantity, gradually, watching the effects of it.

There are also hygienic remedies deserving attention, food and medicine to support the strength. Brandy punch and toddy, port wine, or even claret are indispensable, when the disease is accompanied with much prostration. Brandy toddy, warm, may be given frequently, and in small doses, and is

probably the best remedy in severe cases. Milk punch is applicable to mild forms of the disease, but, when there is much inflammation of the intestines, the digestion of the milk will prove injurious, as it coagulates in the stomach and by passing into the bowels, will increase the evil already existing. In chronic cases, port wine is serviceable, but it is too stimulating in the active stages of the disorder. In using these remedies you must be guided, in a great measure, by the feeling of the patient, and if he complain, after their use, of a burning heat and pain in the stomach, they must be discontinued, and mucilages resorted to; cold water alone, or with some mucilage in it, is very good; with regard to the choice of a mucilage you may be guided by the taste of the patient. The bene plant, slippery elm, rice, or gum arabic are all used, although differing somewhat in their effects, some being astringent and others slightly laxative; the taste of the patient is always the best criterion; towards the decline of the disease, broth must be given and biscuit soaked in wine and brandy, the diet must be principally farinaceous, as articles of this sort are more easily absorbed in the active stages of the disease. In chronic cases, this insipid food frequently disgusts, and it will be necessary to change it.

Last summer a number of experiments were performed, of which I hope to give an account in the course of this summer, with a view of testing the nature of the secretions, and they were all found to be alkaline; the saliva, the urine, the perspiration, and the evacuations from the bowels. I then gave, with a view to correct this state of things, sulphuric acid, of course very much diluted, and I have also used it this year; the saliva, urine, and perspiration became acid, but the discharges from the bowels continued of the same character and as frequent as before; there was less pain, but this was probably owing to the opium. I then abandoned the acid, and used opium alone.

During the last summer the mineral acids were very useful in New England, where there is a domestic prescription highly spoken of, in epidemic dysentery, consisting of vinegar and salt, which, no doubt, owes its efficacy to the acid; whether acids would effect a cure I have not determined, but I know that they alter the secretions very materially. Here, for some time, a mixture of Hope's has been found very beneficial, consisting of camphor and nitric acid, not enough to irritate, combined with laudanum, in sufficient amount to check the frequency of the discharges. In the quantity of opium to be administered, we must be guided by the effect it produces. When the tongue becomes dry, attended with stupor and prostration, it must be reduced, not when the prostration is the effect of the disease, but when the face becomes livid and turgid, opium is prejudicial, except in small doses. As palliatives, several means are to be used; opium is always serviceable to tranquillize the system and allay pain, when alone or in combination. A mixture of camphor and opium is frequently used by persons afflicted with this disease without consulting a physician; at night more especially is this required, in order to procure sleep; during the day, it is frequently better not to use it.

* Dr. Harlan.

Of the purgative mode of treatment, I am not disposed to think favourably, in severe cases; in slight cases, it is unquestionably very beneficial, but my own experience is against it as a general mode of treatment. Castor oil with laudanum is one of the best towards the close of the affection, it removes the scybala from the colon, and, as is generally the case, slight inflammation, especially of the mucous membrane, is best removed by a slight stimulus. Mercurials I prefer in the treatment of dysentery, to what is called the saline treatment, always varying the remedies, according to the particular variety of the disease at the time. I know that the saline treatment has had some strong advocates, but I am not at all satisfied with it, not because I have not tried it, for I have tried every thing, but the results have not been such as to induce me to give it any preference. Finding dysentery to be so complicated a disease, and so protean in its aspect, and that it may be treated in so many different ways, you might be led to suppose that one mode of treatment was as good as another, and that the patient would do as well, if let alone. Such, however, is not the case; any plan of treatment, unless manifestly absurd, is better than none, and a very good guide to us will be the instincts of the patient; if he desires hot drinks, we may gratify him, or should he give a preference to iced water, it will not be found injurious. Opium may be given, either to excite narcotism, in a slight degree, or merely as a palliative.

The chronic form of dysentery is very common among persons who have had this disease, with great severity, in the tropics; it is accompanied with ulcerations in the colon, and the intermediate mucous membrane is of a dark slate colour. Chronic diarrhoea we may often suspect to proceed from the presence of tubercles; in France all chronic diarrhoea is regarded as arising from tubercles, but, in this country, though very frequently, it is not invariably the case. The mucous membrane is pale and softened, and the character of the fluids is changed. This alteration in the mucous membrane is a secondary and not a primary lesion. In such cases as these, mercury may be pushed to gentle salivation, and much benefit will be derived from sulphur-baths. A sea voyage is also very serviceable. Patients here, labouring under this disorder, frequently are sent to the Virginia springs, but the sulphur bath, made artificially, I am disposed to think more beneficial from our making it stronger. Cold or salt baths, according to the feelings of the patient, may also be used, with advantage. In chronic forms of the disease, we should abstain in a great degree, from internal remedies; the insipid articles of diet should be used, unless the disease remains stationary, in which case we may change it completely, substituting mutton chops, chicken, and wine, such as claret. A friend of mine, in Paris, who had laboured under the disease for a long time, and persevered in a farinaceous diet, and the use of opium, was cured by abandoning it and eating beef steaks, and drinking the old French wines. Port is a good wine, but here we seldom can procure it pure; the French wines are slightly acid and astringent, and answer a very good purpose. I have not spoken to you of diarrhoea, as a separate

disorder, as it will come in in an after-part of the course, and is a subject involving extensive connections. It may occur either as a primary or as a secondary disease, in which case it is often attended with organic changes.

CLINICAL REPORTS.

PENNSYLVANIA HOSPITAL.

Case of gunshot wound of the hand, healed by the first intention.

ALEXANDER —, æt. seven years, was brought to the Hospital, July 5th, with a lacerated wound of the right hand, caused by the discharge of a gun, loaded with powder and paper, while his hand was over the muzzle. The space, between the first and second metacarpal bones, was completely laid open, and the skin torn up for a distance of about two inches, on the upper part of the hand. The palmar arch was, of course, divided, but there was no haemorrhage, owing to the cauterization of the blazing powder. A small superficial vessel was secured, the wound drawn together with adhesive straps, dressed with dry lint, and placed on a splint, and an opiate given.

July 6th.—Slight fever—laxative and low diet. *Cold applications were kept constantly on the hand, by means of a syphon, for twelve days*, during which time the dressings were not disturbed, the child complaining of no pain.

July 17th.—The dressings were removed for the first time since the accident, and the wound was found to have united by the first intention, excepting at the surface, where the skin had been lacerated. Nitrate of silver to the edges of the wound, which were brought together with adhesive straps, a dressing of simple cerate, and the hand was laid on a splint.

August 1st.—The wound has been dressed daily, the edges of the sore touched with nitrate of silver, and it is now completely cicatrized.

This case illustrates the happy effects of the application of cold to lacerated wounds, now practised to a considerable extent in Paris, in place of the ordinary warm poultices which have been, heretofore, usually recommended. A gunshot wound, of sufficient severity to render the loss of the hand not improbable, in this instance, healed in a very short time, without pain; while, had heat been applied to it, it must have sloughed, with danger of secondary haemorrhage, and other bad consequences.

List of Accidents, admitted into the Pennsylvania Hospital, from July 11th to July 25th, 1838.

One case of dislocation of the humerus into the axilla, caused by a fall upon the shoulder; reduced at once, by extension with a towel and wet roller, and the heel in the axilla.—One case of compound, comminuted fracture of the skull, under the right temporal muscle, close to the junction of the temporal and parietal bones, with depression—the dura mater very slightly wounded; trephined by Dr. NORRIS: ten days after the operation, symptoms of inflammation of the brain, and effusion supervened, the arm, opposite to the side of the head wounded, being paralyzed; the patient has been slightly mer-

curialized, with great improvement of the symptoms, and gradual subsidence of the paralysis.—One case of incised wound of the arm; haemorrhage, from some small vessels, was arrested by pressure, and the edges of the wound drawn together by adhesive straps; doing well.—One case of burn, involving the right hand, part of the fore arm, neck, and breast; dressed with poultice; sloughs since separated, and the ulcers are now dressed with Goulard's cerate, and the hand and arm placed on a splint.—One case of oblique fracture of the head of the tibia, from the fall of a bank of earth upon the leg, on the rail-road, near Norristown: the man was brought to the hospital, twenty hours after the accident, with intense inflammation of the knee-joint; V. S. ad $\frac{3}{4}$ xlviij., ad deliquium, and $\frac{3}{4}$ xx. of blood were afterwards taken from the knee, by leeches; low diet and a purge. The patient, a stout, healthy young man, bore the depletion well; the inflammation has very much subsided, and the leg is now treated after the usual mode, by a fracture-box.—One case of fracture of the coracoid process and neck of the scapula, caused by a fall from a waggon upon the shoulder; treated with the clavicle apparatus.—One case of oblique fracture of the middle of the thigh, in a child, eight years of age; treated with Physick's modification of Desault's splints. Excoriation along the course of the counter-extending band, and a tendency to slough in the heel, having appeared, two long splints have been applied to the thigh, nine days after the accident, and the limb is retained in Desault's apparatus, extension being abandoned.—One case of contused ankle, cured by rest and cold applications: the man was threatened with mania a potu, the incipient symptoms of which were relieved by the free use of opiates and tincture of valerian.—One case of poisoning, from the introduction of half an ounce of arsenic into the stomach; immediately after the accident, an emetic, of ipecacuanha and sulphate of copper, had been given to the man, previous to his entrance into the hospital; after his admission, an ounce of the hydrated peroxide of iron, in two doses, at the interval of an hour, was administered. The habits of the patient were of the last degree of intemperance, amounting, on his own admission, to the daily use of a quart of ardent spirits. Symptoms of intense gastritis supervened; thirst and vomiting, every thing being rejected by the stomach, except a little ice. Pulse one hundred and twenty per minute, and very feeble. Brandy and laudanum were freely exhibited by the rectum; but the patient sank, eighteen hours after the arsenic had been swallowed. Examination after death revealed immense inflammation of the mucous membrane of the stomach, extending down into the duodenum, amounting, in places, to the effusion of blood beneath the membrane.—One case of fracture of the upper third of the humerus, accompanied by violent inflammation. Treated at first with cold applications, and an attempt to retain the fragments in apposition by the clavicle apparatus: very severe mania a potu supervened, during which the arm was bandaged tightly in a pillow; the mania a potu has been cured by the free use of brandy and a blister to the back of the head; there is a disposition to slough, about the fracture, which is treated, for the present,

by cold applications and three long splints.—One case of oblique fracture of the upper third of the thigh, from the caving in of a bank of earth upon the limb; treated with Physick's and Desault's apparatus; severe mania a potu, with great prostration, has come on, and the patient is at present under a treatment of free stimulation, with a blister to the back of the head.—One case of incised wound of the wrist and palm of the hand, from a cut with a scythe; no large vessel injured, and two small ones were taken up; the wound was drawn together by adhesive straps. The dressings were removed at the end of three days, and the wound found to be nearly united by the first intention.—One case of fracture of the tibia and fibula, just above the ankle joint; treated with the fracture-box, and lead water: mania a potu has since supervened, and the man is at present under a treatment, similar to that employed in the two cases above mentioned, combined with opiates.—One case of lacerated wound of the arm, which had been caught on an iron spike; no haemorrhage of consequence; the wound was brought together by three stitches, and cold applied to it, by means of a syphon: the dressings have not yet been disturbed.—One case of contusion of the calf of the leg; relieved by rest and cold applicatio.

The contused wound of the thigh, made by the red hot iron, mentioned in the last number, is nearly well. A counter opening formed in the lower part of the thigh; a free discharge was kept up by pressure, and the wound has granulated, two small superficial ulcers only remaining. The other cases are still under treatment.

FOREIGN SUMMARY.

Criminal Responsibility.—Venders of Quack Medicines, Quack Doctors, and Regular Practitioners.—There are too many inconsistencies of all kinds in our patchwork laws and legislation to leave room for surprise at the manifest inconsistency of the portion of law on which we are now entering. This branch of law, like any other branch of criminal law on which there has been little legislation, is composed mainly of deductions from general principles of morals and convenience, made by the courts for the particular case or occasion. It is a branch of the common law, or, as it may not aptly be called, our *unwritten wisdom*; and we may add, that on a subject like the present, we do not, in general, regret the absence of legislation; for such judge-made law is commonly more wise, more beneficent, and more just than the laws which emanate from parliament. Thus, in the case of quack medicines, parliament, instead of dishonouring, recognises the poisons, imposes a stamp, and with it a moral value, upon them; and their sale, with their impudent labels, and often fatally deceptive statements, become by necessary implication *legal*, and consequently disipunishable. But though the sale of quack medicines is legal, we beg to suggest to the medical corporations a distinction which we deem of some importance, and which will enable them to vindicate the rights of their members, and to protect the public health. The distinction rests upon the following principle:—That a man who sells poison under an attractive name commits a

nuisance, and is indictable; he is indictable before any fatal consequence happens; the danger to the public makes the nuisance. The labels and statements which accompany the quack-poison are full of danger to ignorant persons, and it is a species of quackery which ought to be attempted to be put down by prosecution of the venders. The sale of these poisons could then be carried on only under the obscure name of the quacks themselves, without their delusive statements. A prosecution would establish the criminal responsibility of the simple vender of a poison, with a paper containing a recommendation of it to cases in which its use would be condemned by the whole body of the profession.

That there is great inconsistency in punishing persons who practise as physicians, surgeons, and apothecaries, without a license, and at the same time giving impunity to the sale of quack medicines, in the form in which it takes place at present, is evident, if we consider the real character of the bills which accompany the stamped poisons. What are they but *printed prescriptions* of particular doses of secret ingredients to be taken as *medicines*? What are they but substitutes for the prescriptions of the physician? Their very object is to render it unnecessary to resort to the educated judgment and skill of the apothecary, surgeon, or physician. This object they effect by inspiring the faith of the ignorant. The laws of parliament relating to the medical profession, and the charters of the medical bodies, establish the principle of protecting society in cases of disease against ignorance. There is the College of Physicians, to protect against ignorance in those who practise as physicians; the examiners of the Apothecaries' Company, to afford a similar protection with relation to that branch of the profession. No person can practise as a physician or apothecary without a license; and we affirm that upon a true construction of the 3 Hen. VIII., c. 11, it is illegal to practise as a surgeon without a license. Every portion of medical practice is thus embraced in the statute law, and the inconsistency is too great to be persisted in, of allowing the present mode of selling quack medicines, if it is attacked in the courts and in parliament, as it ought to be, by the medical corporations. There is, indeed, one circumstance in which the quack papers differ materially from a regular prescription;—that they are adapted, not for a particular case, or particular individual, but for all whose ignorance fits them for the imposition.

With respect to quack doctors, or unqualified persons,—for merely practising without doing harm, (if that is possible,) they are not responsible. Unlike quack papers, they have the power of discrimination; and as their *legal* inferiority only arises under the statutes and charters which establish the medical profession, they are liable only to the penalties provided against unqualified practisers in surgery and medicine. Their criminal responsibility therefore arises only in case of death happening through their want of skill or negligence.

It is an important question, whether they are entitled to a milder, or liable to a harsher consideration, in consequence of their not being members of the medical profession. In a civil point of view this ought to go in extenuation; if I prefer a person

who has not the *legal* qualifications to one who has, I am not entitled to reproach him with his want of that skill which the law has secured to me in another person. But the public are not bound by this consideration; on the contrary, the public having already, in the provisions of different statutes, declared the importance of scientific qualifications, and having provided for them, may claim the exercise of extraordinary care and skill in those who practise without the legal qualifications; and, according to this principle, a quack doctor would have to bring to his patient at least the average knowledge, care, and judgment.

Such is the principle on which the criminal responsibility of quack doctors ought to be defined; but so rare are the cases which arise, so humane and kindly disposed generally are the judges, and so few the opportunities of discussing the principles of the criminal responsibility of this class of offenders, that it rather seems that this principle has been overlooked, and that quack doctors are held liable, like regular practitioners, only for *gross* unskillfulness or negligence. Thus, in the case of Webb, who was an agent for the sale of Morison's pills, and was indicted for having caused death by administering doses of gamboge, aloes, and other deleterious substances, one of the most learned and intellectual judges that ever sat on the bench (Lord Lyndhurst) told the jury, that if the death of the deceased was occasioned or accelerated by the medicines which the prisoner had administered, and that he had administered them either with a criminal intent, or from *gross ignorance*, they must find him guilty.*

The prisoner, Williamson, was seventy-five years of age, and had been in the habit of acting as accoucheur, though not regularly educated in that faculty. He was indicted for murder and manslaughter, in having caused the death of the deceased by mistaking a prolapsus uteri, which took place shortly after the delivery, for a remain of the placenta; and in endeavouring to remove the latter, he had lacerated the uterus, and torn open the mesenteric artery. This caused the death. Lord Ellenborough said, with reference to the charge of manslaughter, that, "to substantiate it, the prisoner must have been guilty of criminal misconduct, arising from the *grossest* ignorance or the most criminal inattention; one or other of these is necessary. It does not appear that there was any want of attention, and it appears that he had delivered many women at different times; from this he must have had some degree of skill. It would seem, that having placed himself in a dangerous situation he became shocked and confounded. I think that he could not possibly have committed such mistakes in the exercise of his unclouded faculties; and I own that it appears to me that, if you find the prisoner guilty of manslaughter, it will tend to encompass a most important and anxious profession with such dangers as would deter reflecting men from entering into it."

Of course the prisoner was found not guilty; though, in the opinion of the medical witnesses, the prisoner's mistake showed great want of anatomical knowledge.

* *Rex v. Webb*, 1 M. and R. 411.

In the case of Mr. Van Butchell, who was indicted for causing death by an injury in the rectum, caused by the introduction of a bougie, Mr. Baron Hullock broadly stated it to be his opinion, that "it makes no difference whether the party be a regular or an irregular surgeon;" and he adds, as a reason—"Indeed, in remote parts of the country, many persons would be left to die, if irregular surgeons were not allowed to practise;" and he adds, "There may be cases where both regular and irregular surgeons might be liable to indictment, as there may be cases where, from the manner of the operation, malice might be inferred."

This ruling, however, is opposed to an opinion in Lord Coke's Institutes, where it is said, "That if one who is not a regular surgeon take upon him to cure a man, and the patient die, this is felony;" which, though not literally correct, involves the principle which we have ventured to assert as the true principle of the criminal responsibility of quack doctors. As for the want of regular medical men in remote parts of the country, the surest way to exclude them is to establish a low principle of responsibility in the case of the irregular practitioners.

It is satisfactory to find more enlightened views taken in the case of Nancy Simpson, by Mr. Baron Bayley. A sailor discharged from the Liverpool Infirmary as cured, after undergoing salivation, went to the prisoner for an emetic to get the mercury out of his bones, and died from one dose of white vitriol, or corrosive sublimate, administered for this purpose by the prisoner. Mr. Baron Bayley said, "I take it to be quite clear, that if a person, not of medical education, in a case where professional aid might be obtained, undertakes to administer medicine which may have an injurious effect, and thereby occasions death, such person is guilty of manslaughter. He may have no evil intention, or may have a good one, but he has no right to hazard the consequence *in a case where medical assistance may be obtained*. If he does so, it is at his peril; it is immaterial whether the person administering the medicine prepares it, or gets it from another."

We have treated the subject of the criminal responsibility of quacks so fully, that our limits will not allow our dwelling on that of the regular practitioner; and it is scarcely desirable that we should do so, because we trust that a case can hardly happen of manslaughter by a regular practitioner; and what would be the rule of law in such a case, is sufficiently manifest in the preceding exposition relating to quack doctors.—*British Medical Almanac*, 1838.

Practical Remarks on Poisons, by R. D. Thomson, M. D.—When a medical man is called to see a patient who is suspected to have taken poison, or who complains of some sudden local pain of an irritating character, or is seized with some violent spasm or convulsion, his object should be first to make inquiries as to the probability of poison having been swallowed, and if the symptoms do not become mitigated, to form an immediate diagnosis. In preparing himself for this duty, it is necessary that he should be acquainted with the action of poisons in respect to the various structures which they attack, and to those parts of the body where

the violence of their action elicits the most remarkable symptoms. The following observations are intended to simplify the subject, and to guide the practitioner by an attempt at a practical arrangement of poisons. When we analyze the symptoms produced by the action of poisons, we find that for practical purposes they may be divided into, 1. *Local Symptoms*.—Such as those produced by corrosive substances—acids, caustics, &c.; the poisons which produce these symptoms have usually been termed irritants, and constitute in toxicological works a large division of the subject of poisons. 2. *Spasmodic Symptoms*.—Where the action of the poison, although frequently exhibiting itself locally, extends generally to the nerves and muscles, and occasions violent spasms or convulsions, as strychnin, camphor, &c. 3. *Narcotic Symptoms*.—Where insensibility gradually supervenes after the poison has been received into the system, without any particular local or general derangement, as from the action of opium and other narcotics. 4. *Antispasmodic or paralytic Symptoms*,—as exemplified by the action of lead and manganese. In taking up each of these divisions *seriatim*, we shall merely dwell upon those points which concern the practitioner, omitting toxicological tests, a subject of too intricate and chemical a nature for any but a practical chemist to engage in, at least when the life of a fellow-creature is concerned. This investigation should be confided, as it is on the continent, to the care of experienced chemists. But with the symptoms produced by the agency of the various common poisons, and with the mode of relieving those symptoms, it is not only proper, but it is the duty of every medical man to make himself acquainted, and to have them so fixed in his memory that he may be enabled to apply his knowledge according to the exigency of the case.

I. POISONS PRODUCING LOCAL SYMPTOMS IN THE ALIMENTARY CANAL.—IRRITANT POISONS. These are:—

MINERAL, OR INORGANIC.

1 Chlorine	6 Potash, soda, alkaline carbonates
2 Hydrochloric acid, nitric acid, sulphuric acid	7 Nitrate of potash
3 Iodine, and hydriodate of potash	8 Lime
4 Phosphorus	9 Mercury
5 Arsenic	10 Bismuth, tin, gold, silver, zinc, antimony.

VEGETABLE, OR ORGANIC.

Castor oil	Coloceynth, elaterium
Jatropha	Mezereon, aloes
Jalap	Euphorbium
Savin	Bryony.

1. *CHLORINE GAS*.—*Symptoms*. In consequence of the great practical importance of this gas in the arts, it is not improbable that cases might occur where injurious effects may be produced upon workmen by its inspiration. The first symptom produced when chlorine is introduced into the trachea, is a feeling of roughness and constriction, which pervades the mucous membrane; coughing then supervenes, which is not accompanied by expectoration, if the lungs have been previously in a healthy condition. The glottis is more particularly the seat of the uneasy feeling of roughness and tickling; the chest experiences a sensation of oppression, and if the quantity inspired be considerable, the coughing continues for a long time, and

the debility of body, at first progressing slowly, becomes in the end very great. I have seen a person, who had been employed in washing out bottles of chlorine over a water-trough, become so exceedingly exhausted as to be in a partial state of stupor, and to require several hours to walk the distance of a mile; the languor and total failure of strength and energy is so great, that it becomes almost impossible in some cases for the person even to walk. When given as an expectorant, therefore, great caution should be employed in its administration. *Treatment.* The object in the treatment is to neutralize the chlorine; this can be best effected by means of ammonia: all that is necessary is to breathe over caustic ammonia, or to inhale the odour of volatile carbonate of ammonia,—the consequence will be the formation of muriate of ammonia, which will not produce any deleterious effects upon the lungs. If chlorine water has been swallowed, a few drops of ammonia, in water, should be administered.

2. MINERAL ACIDS. *Hydrochloric, nitric, and sulphuric acids.—Symptoms.* When any of these acids is swallowed, a sense of violent heat is experienced along the œsophagus, and in the stomach, and then the symptoms of gastrodynia, or heartburn, appear; these increase in violence, accompanied with eructations, produced by the gases from the decomposition of the coats of the stomach; the matter vomited effervesces when it falls on the mortar of the floor, or when mixed with alkaline, carbonates, or limestone; the pain in the stomach becomes excruciating, the lips shrivel, the teeth become loose and yellow; great difficulty of swallowing is experienced, the pulse is weak and intermitting. *Treatment.* The action of these acids should be arrested by means of alkalis. Carbonates of soda or potash may be administered, in solution, or if these are not at hand, mortar or chalk may be diffused in water, and poured down or injected into the œsophagus. As great difficulty may be experienced in getting the patient to swallow, if the corrosion at the upper part of the gullet should have made considerable progress, anodynes and emollients should then be administered.

3. IODINE AND HYDRIODATE OF POTASH.—Symptoms. These substances are not likely to cause deleterious effects, except in the form of overdoses of medicines, and therefore the practitioner will always be able to ascertain if they have been administered. Great pain and irritation is experienced in the stomach, vomiting supervenes, and when the quantity taken has been considerable, bloody diarrhoea occurs. The urine will probably exhibit the presence of iodine, when a solution of starch is added to it. *Treatment.* We are unacquainted with any antidote to iodine. Starch, which is a very delicate test for detecting its presence, forms a compound, whose action upon the animal economy has not been examined.

4. PHOSPHORUS.—When this substance is swallowed, the symptoms are confined principally to the stomach, but so few cases have occurred, that they have not been well defined. The best antidotes are oils and ether.

5. ARSENIOUS ACID.—Symptoms. In the course of about half an hour after the poison has been swallowed, the patient is seized with sickness and

great faintness; the stomach is affected with severe pain, which is increased by pressure; then follow vomiting, diarrhoea, and tenesmus. After these inflammatory symptoms have lasted for some time, spasms come on, the pulse sinks, delirium occasionally appears, and death takes place. If a white powder be observed in the matter vomited, a portion of it may be exposed to heat on the point of a knife; if it emit the odour of garlic, the probability is that it is arsenic. The mere occurrence of a powder does not necessarily imply the presence of poison; for I have seen oatmeal in the stomach of a person who had died suddenly, and had been exhumed on suspicion of having been poisoned, mistaken for arsenic; and therefore, if a powder occurs, it should be examined before any definite conclusion is drawn, unless for the benefit of the patient. Other symptoms distinguish the action of arsenic. *Treatment.* The first object is to accomplish the removal of the poison from the stomach; beyond which it must take a very considerable time to pass, in consequence of its great insolubility. If vomiting does not occur spontaneously, it should be excited by means of sulphates of zinc or copper, and copious libations of milk introduced into the stomach; the milk suspends the arsenious acid, and hinders it from acting on the coats of the stomach, and at the same time prevents the agony of dry vomiting. Gruel and barley water may be substituted for milk. This is merely to be the preliminary step while the following antidote is preparing:—Take a quantity of sulphate of iron, or green vitriol, dissolve it in water, and add a few drops of nitric acid, boil the mixture for a few minutes, and then add to it a solution of carbonate of soda; a bulky green precipitate immediately subsides; this is to be thrown on a filter, and washed with a little hot water; it is then to be diffused in water, and swallowed by the patient. The hydrous peroxide of iron combines with the arsenious acid, and forms a compound which is innocuous. For the discovery of this important antidote the profession is indebted to Dr. Bunsen, of Göttingen, and in fact it is the only antidote for arsenic with which we are acquainted. If sulphate of iron cannot be obtained, a substitute might be procured by boiling iron filings in a flask or pot with nitric acid, until a considerable portion is dissolved; the solution should then be precipitated by carbonate of soda as before. From the experiments of Dr. Bunsen upon dogs, it would appear that the administration of this antidote is quite effectual; if the poison has not remained too long in contact with the coats of the stomach, when it becomes embedded in the mucus, and probably enters into a partial combination with the animal matter.

6. POTASH, SODA, ALKALINE CARBONATES.—Symptoms. Violent pain in the region of the stomach; a burning pain along the internal surface of the œsophagus, vomiting, debility, slight spasms, hiccup, colic. *Treatment.* The alkalis should be immediately neutralized by means of vinegar or dilute acetic acid; oil has been recommended, but it is difficult to understand how oil, which usually requires heat and time to combine with alkalis, should be preferable to a weak acid whose action is instantaneous.

7. NITRATE OF POTASH.—Symptoms. In doses

of an ounce, pains of the stomach are experienced, dysentery supervenes, and death takes place, preceded by spasms. *Treatment.* We are not acquainted with any means of decomposing this salt in the stomach, and from its great solubility it will be impossible to arrest its action by any mechanical method. Anodynes may be administered with some benefit.

8. LIME.—*Symptoms.* Burning pain in the mouth and abdomen, thirst, and sometimes vomiting. *Treatment.* Acetic acid or vinegar; dilute mineral acids.

9. MERCURY.—*Symptoms.* When corrosive sublimate has been swallowed, the effects which follow are very similar to those of arsenic, but it differs in having a very disagreeable taste, of which arsenic is quite destitute,—in producing an immediate irritation of the throat; the stomach is the seat of a burning pain; nausea and vomiting occur, then diarrhoea, small pulse, general debility, cold sweats, cramps of the extremities, general insensibility, convulsions, death. *Treatment.* The best antidote is albumen. The whites of a number of eggs should be beat up with water, and administered until the symptoms are mitigated. M. Taddei has recommended a *powder*, consisting of five parts of fresh gluten and ten parts of soft soap, dried and ready for use. When triturated with water it forms a glutinous emulsion, which acts as an antidote to most mercurial preparations. Milk may be employed when the preceding cannot be obtained; iron filings have also been employed successfully.

10. BISMUTH, GOLD, TIN, and SILVER, act by corroding the surfaces to which they are applied, that is, by forming compounds with the animal matter. The symptoms must therefore be local, exhibiting themselves in the form of pain in the region of the stomach and intestinal canal, and increasing to spasms or convulsions, according to the severity of the dose. They are not likely to occur as poisons. The silver may be decomposed by common salt. Should sulphate or other salts of zinc be taken in an over-dose, the carbonate of soda, or ammonia, will act as an antidote.

11. ANTIMONY.—*Symptoms.* Vomiting, burning pain in the pit of the stomach, purging, colic pains, sense of tightness in the throat, violent cramps, delirium. *Treatment.* Encourage vomiting. A vegetable decoction should then be administered; as for example, decoction of bark, or bark in powder. Opium has been given with advantage after vomiting has ceased.

12. ORGANIC IRRITANTS.—The action of all vegetable and mineral purgatives depends upon their locally poisonous or irritating properties; when this action is restrained within proper bounds, a cathartic effect is the consequence; when it is pushed too far, the local irritation is so great that inflammation takes place; diarrhoea and dysentery follow, with faintness, convulsions, and death. The only treatment in these cases, is to employ mucilaginous and emollient drinks, and to have recourse to local bleeding if the irritation should warrant its application.

II. POISONS PRODUCING LOCAL AND SPASMODIC SYMPTOMS.

1 Carbonic acid	8 Copper
2 Ammonia	9 Strychnin
3 Cyanogen, hydrocyanic acid	10 Camphor
4 Oxalic acid	11 Coeculus indicus
5 Acetic acid	12 Coriaria
6 Sulphuretted hydrogen	13 Poisonous fungi
7 Barytes and strontian	14 Cantharides.

1. CARBONIC ACID.—*Symptoms.* The action of this gas, which is experienced in coal pits and mines of different kinds, is to irritate the nostrils and fauces so strongly as to cause the glottis to close spasmodically, and to prevent respiration of any kind from taking place. When it is disengaged in coal mines in particular situations, the workmen can only remain for a limited period; they are obliged to respire pure air at intervals; if they continue longer they are affected with weakness, giddiness, and a feeling of oppression over the head. When a bird is plunged into this gas it gasps, and its neck is thrown into convulsions, or at least moves to and fro, in a very remarkable manner. *Treatment.* The medical practitioner should inquire where the patient has been working; if it has been in a coal mine, or in the hold of a ship, it may be concluded that carbonic acid is the cause of symptoms similar to those described. The gas is liable to accumulate also in the excavations of limestone rocks, and in low valleys belonging to the same formation. The Grotto di Cane, and the celebrated Upas valley, in Java, owe their celebrity to the presence of this gas. The guides at the former locality are in the habit of exhibiting experiments on dogs, and of preventing them from suffering permanently, by an antidote, as appears from the following passage, extracted from “*Lithgow's Nineteen Years Travels*” in 1609.

Describing the occurrences at the Grotto di Cane, he says:—“The dog-keeper, for an easie composition, made triall of his dog; and having tyed a string to his hinder leg, he cast the dog scarce half way in the cave, where immediately his tongue hanging out, he fell downe dead. And forthwith his master repulling him back cast him in the lake, pouring in water in his ears, but hee could never recover his life. Whereupon the poor man cryed out, ‘Alas I am undone, what shall I doe, the dog that won my daily food is dead.’” It was obvious from this detail, that the method which the dog-keepers found most effectual in recovering their dogs from such accidents, was the administration of the cold affusion, or rather, the cold immersion. I have accordingly put this suggestion to the test of experiment, and have succeeded in perfectly recovering birds after immersion in carbonic acid, and when they were convulsed and apparently at the point of death, by plunging them once or twice into cold water. From this I am inclined to think that carbonic acid is not a poisonous gas, but acts by producing asphyxia. Bleeding has been generally recommended when the injurious effects of carbonic acid have been experienced, and as it has been strongly advised it should not be neglected, but the cold immersion should never be forgotten.

2. AMMONIA.—*Symptoms.* When ammonia or its carbonate is introduced into the system, severe pain of the throat and chest is experienced, with a degree of suffocation or insensibility, from the violence of the stimulation, and when the dose is con-

siderable, convulsions are produced. *Treatment.* Muriatic acid in a dilute state, should be swallowed when the ammonia has been introduced into the stomach, and the fumes of the acid should be inhaled when the ammonia is acting deleteriously by its contact with the lungs.

3. CYANGEN, HYDROCYANIC ACID.—*Symptoms.* According to the researches of Wöhler and Liebig, bitter almonds when distilled, are decomposed into an essential oil and prussic acid; prussic acid, however, does not exist either in almonds or laurel; but its basis, amygdalin, does, the oil and the prussic acid being formed by decomposition; this action appears to be readily excited by many agents; bitter almonds prove fatal when taken to a considerable extent, and therefore during digestion prussic acid would appear to be evolved. When a small dose of prussic acid has been taken, the symptoms are merely giddiness, slow pulse, and other symptoms of weakness. When the dose has been larger, however, these appearances are aggravated, and convulsions occur, which draw the head backwards; death then takes place without any other remarkable symptoms. *Treatment.* When prussic acid has been inhaled into the lungs or nostrils during distillation, or on smelling a strong solution, which is sometimes overpowering, ammonia should be immediately inhaled. Allow the person to smell liquor ammoniae. If it has been taken internally, ammonia should be swallowed, diluted with water; when the symptoms come on gradually from the operation of a medium quantity, the cold affusion has been found very beneficial.—(*Edin. Med. and Surg. Journal*, July, 1837.) I have observed that the loss of blood greatly relieves the spasmodic symptoms. In a rabbit, whose carotid artery had been cut across and tied with a ligature, half a drachm of prussic acid of two and a half per cent., was inserted into an incision on the back; in about half a minute convulsions came on, and by their violence the ligature was forcibly removed; haemorrhage of course took place, and the spasms immediately subsided; the death of the animal, which ensued, appeared to be occasioned rather by the loss of blood than by the action of the acid.

4. OXALIC ACID.—*Symptoms.* When the dose is concentrated, great pain is experienced in the stomach, and great debility of body with languor; and death takes place without spasms; but when the dose is more diluted, the pulse is low, the pain at the stomach either inconsiderable or absent; spasms at the chest come on; tetanus supervenes, and death seems to take place as if by suffocation. Vomiting generally accompanies the first attacks of pains in the stomach: the pain is of a burning nature. *Treatment.* The object is to neutralize the oxalic acid. This is best effected by means of lime; and this earth, in a state of solution, is to be preferred. Muriate of lime, if it can be had, should be administered in a dilute state; or acetate of lime; or lime water, which is more accessible. In the absence of these, magnesia or chalk suspended in water, by trituration, in a mortar, or by stirring with a rod, should be resorted to. As the action of the poison is very rapid, the practitioner cannot be too alert in the exhibition of the antidotes.

5. ACETIC ACID.—*Symptoms.* Pain in the stomach, vomiting, prostration of strength, convul-

sions, insensibility, death. *Treatment.* Neutralization of the acid by carbonate of soda, or potash, lime, or other alkali.

6. SULPHURETTED HYDROGEN.—*Symptoms.* This gas is exhaled from putrid vegetable and animal matter; and hence accidents may occur to workmen in common sewers, tunnels, &c. It is one of the most deleterious gases to animal life with which we are acquainted. When in a dilute state, it affects persons by producing speedily coma and convulsions, resembling those of tetanus, which extend to the trunk and extremities. When a bird is plunged into this gas, the chief symptoms are, convulsive efforts to breathe, retraction of the head, and rapid death. *Treatment.* Cold immersion, introduction of air into the lungs, respiration over a vessel filled with chloride of lime, and drinking chlorine water, free exposure to the air.

7. BARYTES AND STRONTIAN.—*Symptoms.* Burning sensation at the stomach, vomiting, convulsions, headache, deafness, death. *Treatment.* Dilute sulphuric acid; sulphates of soda, potash, magnesia, and other sulphates.

8. COPPER.—*Symptoms.* Pain in the stomach, coma, convulsions, tetanus, or great rigidity of muscles. *Treatment.* Sugar, albumen and iron filings, alkaline carbonates, ferrocyanate of potash.

9. STRYCHNIN.—*Symptoms.* The effects produced in a young girl by a pennyworth of nux vomica, in which strychnin is the active ingredient, as described by a nurse who saw her, were as follow:—She saw her seated in a chair, and said to her, “Why, Sarah, you appear drowsy.” She answered, “I am;” then got up, and said, “Oh dear, how ill I am; I have taken poison.” Afterwards she fell on the floor, struggled violently,—dreadfully,—was placed on the bed, threw up a large quantity of blood. Afterwards she became very quiet and still; the violent struggles were over; and then she emitted a deep sigh, which was her last. (*British Annals of Medicine*, vol. i. p. 105.) *Treatment.* It is always proper that the poison should be expelled from the stomach; this may be done, either by the stomach-pump, or by emetics. Orfila recommends the inflation of the lungs to prevent asphyxia. Donné has ascertained that in dogs the tincture of iodine, when administered in time, never fails to overcome the action of strychnin. Tincture of nut-galls has also been recommended; and M. Guimont has seen nut-galls in powder milk and sugar cure a dog poisoned with nux vomica.

10. CAMPHOR.—*Symptoms.* A sensation of heat in the stomach, sweat, delirium, convulsions, coma. *Treatment.* Emetics.

(To be continued.)

Cystoplasty.—M. Jobert lately presented to the Royal Academy of Medicine a female whom he had cured of vesico-vaginal fistula by the following simple operation. The fistula was about an inch in diameter, and the consequence of difficult labour. M. Jobert having refreshed the edges of the fistula, dissected off a flap from the external labium, and united it by suture with the refreshed edges of the sore. The first attempt failed, but the second met with the most complete success.—*Med. Zeitung, from French Lancet.*